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Intergenerational Earnings Mobility Among the Children of Canadian Immigrants

by Abdurrahman Aydemir, Wen-Hao Chen and Miles Corak

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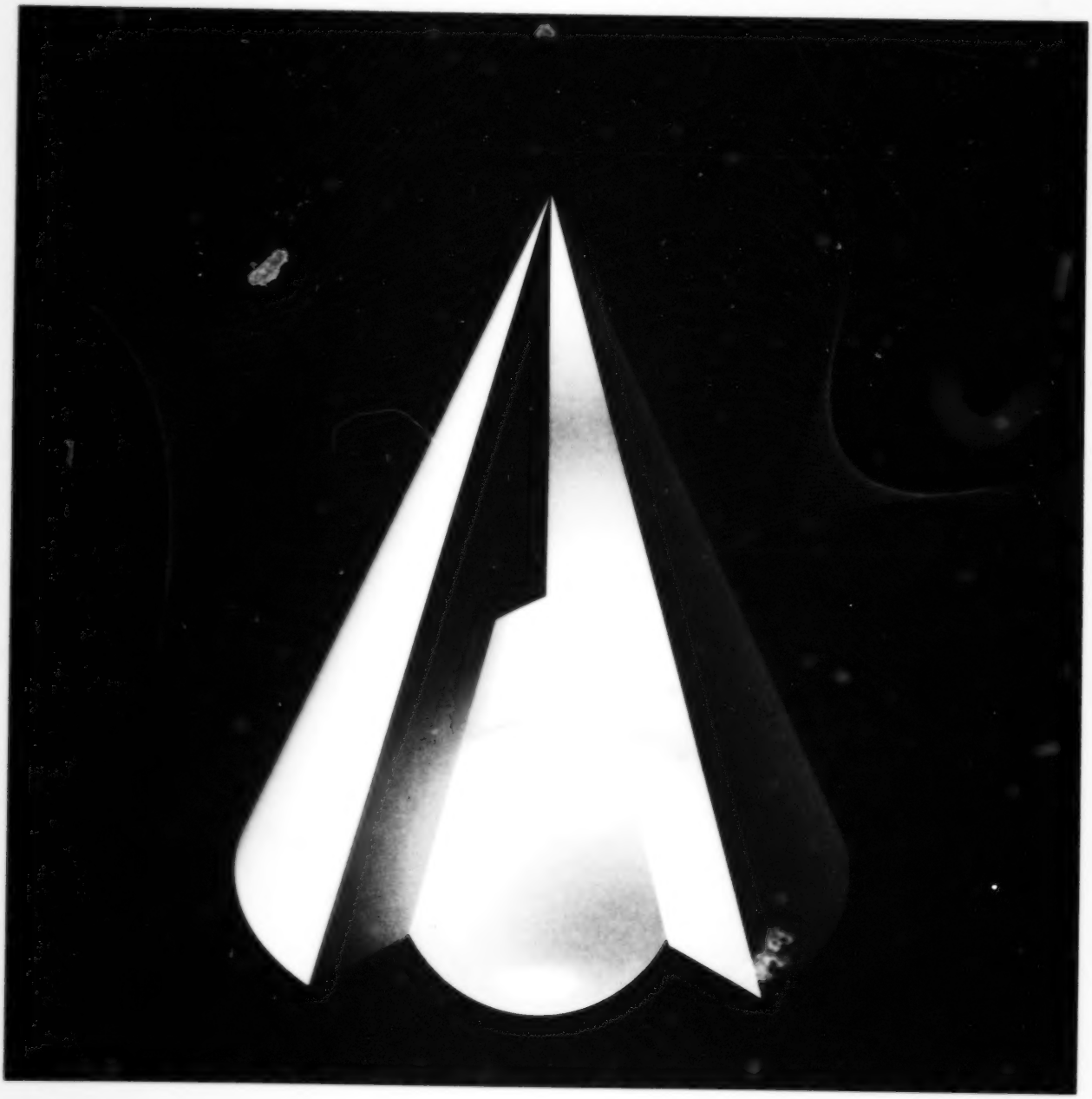

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Abstract

We analyze the intergenerational income mobility of Canadians born to immigrants using the 2001 Census. A detailed portrait of the Canadian population is offered as are estimates of the degree of generational mobility among the children of immigrants from 70 countries. The degree of persistence as estimated in regression to the mean models is about the same for immigrants as for the entire population, and there is more generational mobility among immigrants in Canada than in the United States. We also use quantile regressions to distinguish between the role of social capital from other constraints limiting mobility and find that these are present and associated with father's education.

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1. Introduction

The degree of generational mobility—the relationship between a child's adult labour market and social success and his or her family background—is an important aspect of how societies function. The extent to which children from impoverished backgrounds can realistically aspire to better themselves, or conversely the extent to which children from the highest strata can expect to inherit the same position as their parents, speaks to important social issues such as the long-term consequences of child poverty or more generally to equality of opportunity. Indeed, beliefs about generational income and social mobility inform the defining metaphors of some countries. This is a subject that has often been hotly debated among the broader public but also in academia, as witnessed for example in Scott and Leonhardt (2005) and Wessel (2005) as well as in a number of surveys and overviews (Björklund and Jäntti 2000, Bowles, Gintis and Groves 2005, Corak 2004a 2004b, Solon 1999 2002).

But this is a topic that is also particularly relevant to immigrants and their integration into host countries. From the perspective of individuals and their families, the sometimes very large costs of emigrating and settling in a new land are often shouldered because of the perceived benefits for the children. In this sense, it is important to understand the long run attainments of immigrant children. This issue is all the more pertinent since in some countries there are heightened concerns about the extent to which immigrants have been able to successfully integrate into the labour market. Aydemir and Skuterud (2005), for example, document a marked deterioration in the earnings of successive cohorts of male immigrants to Canada, with the most recent cohorts earning as much as 50% to 60% less than their Canadian-born counterparts. The consequence of this is that low-income rates among recent immigrants are high and getting higher. In this context it is important to understand the inter-generational process determining the long-run outcomes of children. A good deal of generational mobility may imply that disadvantages in childhood will not echo into adulthood, while a lack of generational mobility would suggest that the consequences of low income in the present are even more costly as the next generation will grow up to be low-income adults. Most of the existing literature examines this relationship for the general population, with only a few studies addressing the issue for immigrants.

The main objective of this paper is to provide evidence on intergenerational earnings mobility between first and second generation Canadians. Although there are estimates of intergenerational mobility for the Canadian population, the availability of new information on family background in the 2001 Canadian Census offers the opportunity to examine this issue for immigrants and their children. The large sample sizes in the Census also provide an opportunity to highlight a number of methodological issues raised in existing studies using a similar approach to estimating the correlation in the earnings and the educational attainments between parents and children. We also offer some results that permit a comparison between the degree of generational mobility among immigrants in Canada with those in the United States, two of the world's most important immigrant receiving countries.

An overview of the analytical framework and a description of the data are offered in the next two sections. The subsequent two sections present the major results, which are organized under three related themes. First, least squares estimates of standard regression to the mean models of

generational earnings mobility suggest that the elasticity between father and son earnings is no different among immigrants and their children than among the Canadian population at large. In line with the broader literature it is lower among Canadian immigrants than those in the United States. We also find that there does not seem to be any statistically significant relationship between father and daughter earnings, a result that is in contrast with the prevailing Canadian literature. Second, a simple decomposition of the generational elasticity suggests that it is, at least in the father-son case, driven by factors other than educational attainment. This is in part due to a low estimated return to education, but mostly because other channels are more important. Third, this result leads us to more explicitly examine one possible channel often discussed in this literature, so-called "social" capital which is measured by the average characteristics of the community to which second generation immigrants belong. Applying arguments from the literature on generational dynamics, we use quantile regressions to isolate the role of social capital from other broader societal constraints that may influence its value in the labour market. The results are consistent with a view that these constraints are present among the immigrant population. We also find that the education levels of fathers, not just income, are important in overcoming them. In these regards, the father-son and father-daughter relationships are similar.

2. A framework for the analysis

Our empirical approach is motivated by the regression to the mean model of generational mobility used in much of economic analysis to measure mobility in earnings and income. This is depicted in equation (1), where Y represents an outcome of interest, in our case principally permanent income, and t is an index of generations.

$$Y_{i,t} = \alpha + \beta Y_{i,t-1} + \varepsilon_{i,t} \qquad (1)$$

To use the example of income, in this equation the adult income (in natural logarithms) of family i's child would be $Y_{i,t}$, which is equal to the average adult income of the children of generation t, as represented by α, plus two factors determining the deviation from this average: a fraction of parental permanent income (β $Y_{i,t-1}$) and other influences not associated with parental income ($\varepsilon_{i,t}$).

The average income of generations will evolve through time, and it may be that many or all members of a generation will have incomes higher than what their parents had at a similar age in the past. This is captured in equation (1) by the value of α. However, and just as importantly, the equation reflects the idea that an individual's income is nonetheless related to his or her parents' income. This is captured by the value of β, which represents the fraction of income that is on average transmitted across the generations. In other words, β summarizes in a single number the degree of generational income mobility in a society. It is often referred to as the generational income elasticity, and could conceivably be any real number. A positive value would indicate generational persistence of incomes in which higher parental income is associated with higher child incomes; a negative number would indicate generational reversal of incomes in which higher parental income is associated with lower child incomes. The theoretical underpinning for this model is often motivated by Becker and Tomes (1979, 1986).

In extensive international literature on the degree of generational income and earnings mobility using this framework has developed since the early 1990s, spurred by the availability of sufficiently long panels of data and the publication of Solon (1989, 1992) and Zimmerman (1992), which highlight the importance of measurement errors and methods to correct for them. Many of these developments and issues are foreshadowed in Atkinson, Maynard and Trinder (1983). Corak (2004b) offers an overview of this literature and develops a set of internationally comparable estimates of the earnings elasticity between fathers and sons. This information is presented in Table 1. These results are based upon a meta-analysis of published estimates of the intergenerational elasticity between father and sons' earnings, accounting roughly for the fact that published results differ according to the extent measurement errors are corrected, and the point in the life cycle parental earnings are obtained. Information on daughters and on other definitions of material resources is starting to become available in the literature but is still not as extensive as the father-son relationship.

There is a good deal of variation across the rich countries in the degree to which paternal earnings advantage is passed on to sons, by at least a factor of two from 20% or less to 40% or more. Further, in no country is the inherited parental advantage much lower than one-fifth. The United States, the United Kingdom, and to a slightly lesser extent France, stand out as being the least mobile societies, with 40% to 50% of fathers' earnings advantage being passed on to sons. At the other extreme are Denmark, Norway, Finland, and Canada with about 15% to 20% of earnings advantage passed across generations, and in an intermediate position Germany and Sweden with about 30%.

There is little information of this sort directly related to the experience of immigrants. The extent of generational mobility among immigrants may differ from that of native-born children for a number of reasons. First, there may also be differences in characteristics of immigrant and native-born that are unobserved to the researcher, yet correlated with parental income. The literature on immigration shows that immigrants may be a selected group along not just their observed but also their unobserved (to the researcher) characteristics, reflecting individual decisions to migrate and the administrative rules used by host countries (Aydemir 2003). Selection in unobserved traits such as ability or motivation may make immigrant parents more or less efficient in human capital production of their children and thereby influence their labour market outcomes. Immigrants may also be positively selected if there is a dynastic motive in their migration decision, if they are more concerned about their children's outcomes than the average. To the extent that these unobservables are correlated with income they will influence the estimated value of β in equation (1). Second, the degree of generational mobility may differ among immigrants because of the role of what some analysts have referred to as "ethnic" or "social" capital. Borjas (1993, 1994) points out that the estimates of β in equation (1) may be higher for immigrants if the average value of $Y_{i,t-1}$ over the members of the community within which the child grows up plays a more important role in determining longer run outcomes. The nature and degree of this influence may certainly vary across different immigrant communities, but the presumption in the literature appears to be that on the whole it is more important than

for the population at large.[1] Borjas (1992), for example, offers evidence that this is the case in the United States.

Our approach to estimation is most closely related to that of Borjas (1992, 1993) and particularly Card, DiNardo and Estes (2000). Using U.S. data Borjas (1992) finds a significant elasticity between parent and child education among both those born to immigrant parents and those born to native-born parents. This relationship is weaker for the former, but he also finds that, so-called, ethnic capital plays a major role in intergenerational mobility and more so for immigrant children. This suggests that overall mobility among immigrants may be lower. Similarly, Borjas (1993) finds strong intergenerational correlation between earnings of first and second generation immigrant men. Card, DiNardo, and Estes (2000) using a similar method find elasticities between the earnings of immigrant fathers and their children which—at 0.5 to 0.6—are about the same as, or a bit higher than those reported in the existing U.S. research on the entire population. Card, DiNardo and Estes also find that children of immigrants tend to have noticeably higher education and wages than the children whose parents were born in the country. They also suggest that, at least for the more recent cohort under study, this transmission of economic status across the generations works entirely through the impact father's education has on their children's education and income.

The results of European research vary, though the focus is on educational attainment and is informed by more than just the simple regression to the mean model depicted in equation (1). Van Ours and Veenman (2003) study the Netherlands, Osterberg (2000) and Rooth and Ekberg (2003) Sweden, Nielson et al. (2003) Denmark, and Gang and Zimmerman (2000), Riphan (2002 2003), and Fertig and Schmidt (2002) focus on Germany. In some cases, like the Netherlands and Sweden, the educational attainment of second generation immigrants is lower than children of native born parents and is related to parental education levels; in other cases, like Denmark, it is lower but not related to parental education. However, in all of these cases there seems to be little evidence suggesting that the degree of generational mobility is different among immigrants than among the general population. In Germany the research results are mixed, while for Sweden Osterberg (2000) also reports that intergenerational education mobility is higher for immigrant men than for men with a Swedish background, while the opposite is the case for the women.

The degree of generational mobility among immigrants has not been studied with Canadian data. Corak and Heisz (1999) Corak (2001), Fortin and Lefebvre (1998), and Grawe (2004a,b) present evidence for the general population, but the availability of appropriate data have prevented an analysis focused on immigrants, though Sweetman and Dicks (1999) offer an analysis by ethnicity. Our analysis is based upon a new question added to the 2001 Canadian Census referring to the birthplace of the respondent's parents. The so-called "Long Form" of

1. Outcomes for second generation immigrants may also differ from the general population if immigrant parents differ from native-born parents in terms of the observed characteristics. For example, if immigrant parents have lower incomes then to the degree that generational mobility differs across the income distribution—to the degree, in other words, that the assumption of linearity embodied in equation (1) is in fact not correct—there may be differences in generational mobility between children born to immigrant parents and those of native-born parents.

the Census questionnaire administered to 20% of the population asks, in Question 32, all persons age 15 and over in which country their father and mother were born.[2] On this basis the 2001 Census allows the precise identification of immigrants, second generation immigrants, and others born in Canada (which we refer to as third generation or higher).

This information does not permit a direct link between the adult outcomes of children and the status of their parents when they were raising their families, but it does permit the construction of a "grouped" estimator relating the average outcomes of second generation adults in 2001 with the average background characteristics of immigrant adults from the 1981 Census who were potentially their parents. An analysis of the generational mobility of immigrants using detailed country of origin along these lines is also offered in Borjas (1993) and Card, DiNardo and Estes (2000).

We define first generation immigrants as those who immigrated to Canada regardless of the age of arrival. For the most part we follow Card, DiNardo and Estes and define second generation immigrants to be those Canadian born individuals whose mother and father were both born outside of Canada.[3] More specifically immigrant fathers are drawn from the 1981 Census and restricted to those individuals whose spouse is also an immigrant, and who have children between the ages of 5 and 17 years. Using regression analysis average values of Yi,t-1 are calculated for each country of origin for individuals matching these criteria. Correspondingly, the second generation sample consists of individuals between 25 and 37

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2. The exact wording is as follows.

Remember, these questions are only for persons aged 15 and over.
PLACE OF BIRTH OF PARENTS.

32 Where was **each of** this person's parents born?
Mark " × " or specify country according to present boundaries.

Father ☐ Born in Canada
Born outside Canada
Specify country
☐

Mother ☐ Born in Canada
Born outside Canada
Specify country
☐

Information of this kind last appeared in the Canadian Censuses in 1971 when a much more restrictive question was posed, asking only if the respondent's parents were born in Canada without identifying their country of birth.

3. This said we test the sensitivity of the results to alternative definitions. In particular, we re-classify first generation immigrants based on their age at immigration and the second generation immigrants based on whether one or both parents are foreign born. Borjas (1993) uses the less restrictive definition of second generation immigrants as those with at least one foreign-born parent. We also restrict the sample to non-institutional residents aged 16 to 65 years. Individuals who resided outside the ten provinces and non-permanent residents are also excluded. Non-permanent residents refer to persons in Canada on student or employment visas, Minister's permits, or refugee claimants.

years of age in 2001, and whose parents are both immigrants.[4] Average values of Y_{it} are calculated for each country that respondents report their fathers came from.

Since the variation in the outcome variables may arise from the differences in demographic characteristics between country groups, we construct age- and region-adjusted years of schooling and earnings outcomes for each country group of origin. For the immigrant fathers, we regress the variable of interest (log weekly earnings) on age, age-squared, country of origin dummies, province dummies, and country of origin dummies interacted with age and age-squared. The inclusion of these interaction terms controls for differences in age-earnings profiles across countries. We then calculate predicted schooling or earnings for each source country at age 40. For the second generation sons and daughters we construct age- and region-adjusted outcomes by regressing schooling or log weekly earnings on age, age-squared, dummies for father's country of origin, and region dummies; and then predicted outcomes for each country group for a 31-year-old living in Ontario. These points in the life cycle correspond roughly to that used in much of the generational earnings mobility literature, and in particular the Canadian studies.

To avoid small sample size problems, we aggregate some countries, in which observations were less than 30, into groups and arrive at a total of 70 countries. This is done separately for sons and daughters, and a list of these countries and summary statistics are provided in Appendix Table 1. These 70 data points are used to estimate equation (1) for sons and daughters using average weekly earnings as the outcome.

3. Descriptive overview

Since the 2001 Census marks the first time since 1971 that information on parental place of birth is available, we offer a descriptive overview of the Canadian population that places second generation immigrants in a broader context. Tables 2 and 3 offer information on a number of individual outcomes by parental origin respectively for men and women. The population is classified into three broad groups: (1) Canadian born, by which we mean either those of aboriginal ancestry or those who are third generation or higher Canadians; (2) immigrants, those born in a country other than Canada; and (3) second generation Canadian born, those born in Canada whose parents were born elsewhere. Since there is some suggestion in the literature that long-run integration is related to language acquisition and age at migration, we divide the immigrant population into two groups, those arriving before the age of 12 and those who were 12 or older when they arrived. The former group is likely to have spent some part of their schooling in the Canadian elementary system and are more likely to have developed better language skills. Studies have suggested that these are important considerations in understanding the integration of immigrants (Worswick 2004). This could also mean they may not differ in their adult outcomes from children who were actually born in Canada to immigrant parents, the second generation group. We also categorize second

4. This is a tighter fit between the children of immigrants and their potential fathers than Card, DiNardo and Estes (2000) are able to construct with US data. For 30 source countries they relate the earnings and education of all immigrants in 1980 to all second generation individuals aged 16 to 65 in 2000. Our data permits us to examine the consequences of this slippage.

generation Canadians into three sub-groupings according to whether only the father is an immigrant, only the mother, or both parents.

The weighted population shares suggest that in 2001 almost 65% of the Canadian population aged 16 to 65 are of aboriginal origin or third generation, in the neighbourhood of 20% are immigrants, and about 15% are born in Canada but have at least one parent born in another country. Immigrants and second generation immigrants form, in other words, a sizable proportion of the Canadian population. At the same time, they tend to have more education than their counterparts whose parents were born in the country.[5] Over 98% of second generation Canadians with one parent born elsewhere use either English or French at the home, though at less than 80% this is noticeably lower for those with both parents being immigrants. Further, this latter group is less likely to be married, and if they are married much more likely than their counterparts to have a spouse who is either an immigrant or also a second generation Canadian.

Tables 2 and 3 also show that second generation Canadians are not any more or less likely to receive government income assistance, though less likely to receive other support payments linked to the labour market such as unemployment insurance or disability payments. Tables 4 and 5 offer more detailed information on labour market outcomes. The labour market engagement of the second generation group, however defined, is not any different than for third or higher generation Canadians, whether measured by activity during the Census reference week or activity during the year 2000. For women, there is, in fact, a higher likelihood of working in paid employment. Average annual earnings tend to be higher among immigrant and second generation men, and noticeably more so for women. Second generation women whose parents were both immigrants earned on average just over $27,000 in 2000 or about $630 per week. In contrast third or higher generation Canadian women made less than $25,000 and about $575 per week. These tables also offer the earnings distribution in quartiles. These suggest that second generation Canadians are more likely to be in the bottom quartile if they have only one parent born outside of Canada, but more likely to be in the top when both parents were born elsewhere. Immigrants who arrived in the country before the age of 12 have a similar distribution.

In sum, while this information is a very broad portrait of a very heterogeneous population it does not suggest that second generation immigrants have inferior education and labour market outcomes than other Canadians, indeed likely just the opposite. Table 6 offers information that is focused on the more finely defined sample of individuals that form the basis for our intergenerational analysis: immigrants in the 1981 Census who had children 5 to 17 years of age, and second generation immigrants in the 2001 Census who were 25 to 37 years of age. This information is offered by the region in which the parents were born. Generally these outcomes are superior to those of the population with Canadian born parents. With the exception of those from Southern and Eastern Europe, immigrant fathers had more education and were more likely to have a university degree than Canadian-born fathers in 1981. Their

5. This is also the case when educational attainment is examined within finer age groupings. For example, among 25 to 34 year olds over 44% of second generation men with both parents born outside of Canada and about 50% of women have 16 or more years of schooling. This is the case for 30% of third generation or higher men and 35% of women. See Appendix Tables 2 and 3.

weekly earnings, however, were not, on average, as great with the clear exception of those from traditional source countries of Canadian immigration. Those from North America, Northern Europe and Western Europe earned 14% more than their counterparts with Canadian born parents; those from other parts of the world—with the possible exception of Africa—earned 10% to 16% less.

This picture changes somewhat in the second generation. By 2001, those men 25 to 37 years of age who stated that their parents were born outside of Canada had more years of schooling and a greater likelihood of holding a university degree than Canadians of the same age whose parents were born in the country. With the exception of those from the Caribbean, Central and South America, and Oceania, they also had higher weekly earnings. The earnings advantage is about 6% with the exception of those with parents from the traditional source countries, where at 14% it is more than twice as great in spite of the fact that their schooling advantage is not as great. A similar picture emerges for the potential daughters, though in this case there is an education and earnings advantage regardless of the origins of the parents. Also daughters with parents from the non-traditional source countries have a higher earnings advantage, one that for the most part matches or exceeds that of daughters with parents from the traditional sources.

4. Least squares results of the average elasticity

Tables 7 and 8 offer a series of estimates of equation (1) using least squares for a number of different sample selection rules, respectively for sons and daughters. The results in the first three rows are all based on samples in which Canadian-born individuals report that both of their parents are born outside of Canada. They differ according to the age of these individuals, and according to the age and family characteristics of their potential fathers who are drawn from the 1981 Census. Our preferred estimates are in row 3, but this entire set of results is intended to illustrate the impact of the potential slippage in associating sons with their actual fathers by the use of a grouping estimator, and also to offer a basis for comparison with the U.S. literature.

The first two rows use a sample selection rule as similar as possible to those in Card, DiNardo and Estes (2000). This is the broadest possible definition of second generation immigrants and their potential fathers, using males between 16 and 65 years of age from the two Censuses. The second row differs from the first in that we use the sons' predicted earnings at age 31 as the outcome of interest. This choice makes no difference to the estimated value of β, which, focusing for the time being on men, is found to be 0.207. In contrast Card, DiNardo and Estes (2000, table 6.7) report an elasticity of 0.44 for a fathers in 1940 and sons in 1970, and 0.62 for fathers in 1970 and sons in 1995. As they note, and as suggested in Table 1, these are in the range of reported estimates for the general U.S. population. But they are significantly higher than the estimate we obtain using their sample selection rules, though our larger sample size of 70 is more than double the number they use.[6]

6. Their grouping estimator is based on 34 countries of origin for the 1940-1970 analysis and 33 for the 1970-1995 analysis.

A more finely selected sample is used in row 3, with the ages of sons being narrowed to include only 25 to 37 year olds and the sample of potential fathers including only immigrants who are in a conjugal relationship and have children 5 to 17 years of age in 1981. This sample is the tightest definition possible that links adult sons with their potential fathers. There will be slippage in this sample if some immigrants and their families in the 1981 sample left the country before 2001. This factor aside the estimate of β, at 0.267, suggests that the point estimates from the more broadly defined samples in rows 1 and 2 are an understatement of about one-third. This said, the estimates are within one standard deviation of each other. The only change introduced in row 4 is to broaden the sample of sons to include those with one parent who was born in Canada, more akin to the definition used by Borjas (1993). The estimate of the slope falls from 0.267 to 0.224, a difference of less than one standard error.

Finally row 5 reports the estimation results when the outcome of interest is defined to be the natural logarithm of annual rather than weekly earnings. This is the outcome used in much of the existing Canadian literature on generational earnings mobility as for example in Corak and Heisz (1999) and Grawe (2004a,b), and as reported in Table 1. The resulting estimate at 0.176 is almost exactly in line with these results.

In sum, the major conclusions from this table are: (1) that the best estimate of the generational elasticity in father-son weekly earnings is 0.27; (2) that the generational elasticity among the immigrant population in Canada is no different than for the population at large; and (3) that this elasticity is lower, possibly about 50% lower, than in the United States.

Table 8 offers the least squares results for the father-daughter earnings relationship. All of the estimated elasticities are not statistically different from zero, though the point estimates suggest a very weak negative correlation. This is in contrast with both the existing Canadian literature for the population at large and the findings of Card, DiNardo and Estes (2000). Two Canadian-based studies examine the generational mobility of daughters, focusing on annual earnings. Fortin and Lefebvre (1998, table 4.3) use a similar estimator with Census data that is based upon averages of occupational earnings to suggest that in 1994 the father-daughter elasticity is in the neighbourhood of 0.22, though one of their estimates is as low as 0.14 it remains statistically significant. Corak (2001, table 1) uses administrative data that directly link fathers with their children and reports a father-daughter earnings elasticity of 0.20. Card, DiNardo and Estes (2000, Table 6.7) report 0.21 for U.S. immigrants using their 1940-1970 sample, and 0.50 for their 1970-1995 sample. The latter result is not significantly different from the 0.62 reported for fathers and sons.

Figures 1 and 2 are scatter plots of the 70 data points and the estimated regression lines from rows 3 of Tables 7 and 8. The regression line is estimated with weighted observations so the distance from the regression line in Figures 1 and 2 may not indicate the actual regression residual. In order to draw further insights we identify any particularly influential data points by successively dropping a single observation from the regression and re-estimating equation (1) with the remaining 69 observations. We do this for each observation and obtain 69 separate estimates of β, which are plotted in Figure 3 for sons and Figure 4 for daughters. The results are always within one standard error of the preferred estimates in row 3 of Tables 7 and 8 based on all 70 observations. This exercise highlights that sons of fathers from China and the

UK have a noticeable impact on the point estimate, suggesting that they are more mobile than the average. China also stands out in the results for daughters.[7] The opposite is the case for sons with fathers born in Greece. Though these observations stand out in Figure 3 it should once again be stressed that the changes are not outside of the range of statistical uncertainty. Accordingly our major conclusions are unchanged: in the case of the father-son relationship none of these results are outside of the range of existing Canadian research; in the case of the father-daughter relationship none of the results are significantly different from zero; and finally, overall none of the results puts the estimate within the range of the U.S. findings.[8]

We expand upon these results by talking a small first step in describing the transmission of economic status across the generations. An often cited transmission mechanism in determining intergenerational mobility is investment in education, and we explore the extent to which these outcomes represent differential access to schooling in the following way.[9] The benefits of education in the labour market are represented as

$$Y_{i,t} = \rho_0 + \rho E_{i,t} + u_{i,t} \qquad (2)$$

where ρ_0 is a constant, $E_{i,t}$ represents the number of years of education individual i has obtained, ρ is the rate of return to an extra year, and $u_{i,t}$ represents influences on earnings other than education. Education attainment is assumed to be dependent upon father's earnings so that

$$E_{i,t} = \gamma_0 + \gamma Y_{i,t-l} + v_{i,t} \qquad (3)$$

Together these relationships imply that $Y_{i,t} = (\rho_0 + \rho\gamma_0) + \rho\gamma Y_{i,t-l} + \upsilon_{i,t}$, where $\upsilon_{i,t} = \rho v_{i,t} + u_{i,t}$. This is in the form of equation (1) and implies that $\beta = \rho\gamma + cov(Y_{i,t-l}, u_{i,t})/var(Y_{i,t-l})$. In other words the estimated magnitude of the generational earnings elasticity can be decomposed into the influence of two components: those having to do with education (the return to education and the influence of parental income on educational attainment), and those having to do with the influence of family background through channels other than education.

The results are presented in Table 9. First, the factors driving the overall estimates of the generational elasticity are those running through pathways other than through educational attainment. The relationship between father's earnings and son's educational attainment is

7. The relative shares of these countries in the entire population also determines the extent of the change in the estimated elasticity. For example, as Appendix Table 1 illustrates the UK has the second highest number of children in the data and therefore carries a relatively large weight in the weighted regressions.

8. For reference, Figures 1 and 2 also include an observation for Canadian-born men and women whose fathers were born in Canada. This observation is not used in the regression. In the case of Figure 1, this data point is below the regression line and in the lower right quadrant of all points, indicating that these parents have above average earnings but that the sons have below average adult outcomes. The earnings of the sons are lower than what their father's income would predict from the relationship for second generation immigrants. This suggests that children from second generation families of the same earnings as those from Canadian born families will on average earn more, or equivalently that children from much lower earnings backgrounds will on average do better or no worse.

9. Similar decompositions are used in Blanden (2005), Blanden, Gregg and Machin (2005) and Österbacka (2004).

relatively weak, and the return to education for second generation men is low. The result is that almost all of the 0.267 estimate for β is related to other channels. For daughters the return to education is much higher, but access is less influenced by paternal earnings leaving a weak correlation due to education that meshes with a weak negative influence from other familial influences. There are no comparable results along these lines for the Canadian population at large, but Blanden (2005, table 12) reports that in the UK, the U.S., and Germany from one-third to one-half of the estimated generational elasticity is explained by influences associated with educational attainment. Implicitly our results from this decomposition point to the importance of other aspects of family background—unobserved characteristics or social capital—as playing an important role in determining the degree of generational earnings mobility among Canadian immigrants.

5. Social capital and equality of opportunity

In Borjas (1992) the impact of social capital is explicitly recognized by including the average characteristics of the relevant community in equation (1) so that the estimating equation becomes

$$Y_{i,t} = \alpha + \beta_1 Y_{i,t-1} + \beta_2 \overline{Y}_{t-1} + \varepsilon_{i,t} \qquad (4)$$

where $\overline{Y}_{t-1}$ represents the average earnings of fathers from the same country. This is a formulation for individual level data, and implies that our analysis based upon group averages yields an estimate of $\beta=(\beta_1 + \beta_2)$, making clear that this is potentially one reason why the generational elasticity among immigrants may differ from the general population. However, as Borjas (1992, p. 145) also makes clear, the interpretation of this variable as social capital "is not the only one consistent with the data. Such factors as discrimination or lack of access to schools, credit markets, or other institutions can also generate a correlation between the skills of children and the average skills of fathers in the ethnic group...." As such it would seem that the focus on average outcomes, as estimated by least squares, obscures the role of social capital with broader social factors that may also determine how group characteristics are valued by the labour market.

This issue is similar to discussions in the generational earnings mobility literature of interpreting β as an indictor of equality of opportunity. Roemer (2004, 1998) cautions that estimates of regression to the mean models should not be taken as indicators of equality of opportunity because parents influence their children through a hierarchy of circumstances. Some of these will imply a correlation between earnings across the generations that most in

society would agree should not be eliminated.[10] Least squares estimates focus on average outcomes that blend all of these together.

Grawe (2004b) argues that this requires an estimation strategy explicitly addressing the extent to which the outcomes of the highest-earning children of low-income families fall short of the highest earnings children from high-income families. These are presumably individuals who make the same type of choices, reflecting similar motivations and preferences. He applies his argument to cross-country comparisons of the degree of equality of opportunity, and in Grawe (2004a) tests for the presence of financial constraints in determining access to higher education.

We paraphrase this reasoning to apply to immigrants with different kinds or levels of social capital. Figure 1 can be used to illustrate the argument. The scatter plot is also divided into four quadrants according to whether the weekly earnings are above or below the averages for both fathers and sons. Countries in the lower left quadrant have below average paternal earnings that are related with below average earnings for the sons, and in most cases below what would be predicted by the regression line. Other countries, such as those in the upper left quadrant with roughly similar paternal earnings are associated with much higher child outcomes, and in some cases significantly above what would be predicted. If the unobserved characteristics or social capital of these two communities differs significantly we would, on average, expect different earnings outcomes among the children. The family and community resources fostering beliefs and motivation or offering a network facilitating access to schooling or particular jobs in a way valued by the Canadian labour market may be greater in one case than in the other. If so, we will expect the children from the relatively advantageous social background to have higher earnings than their counterparts, and to be in the top left quadrant of Figure 1.

We might also expect that these children are more likely to face any other barriers or constraints in the way of economic success that might be imposed by society at large. In other words, these broader social constraints might be more likely to be binding for this group. As such, if a researcher is interested in distinguishing the influence of social capital from the barriers arising from the structures embedded in the education system or the labour market, then it makes some sense to focus on a best case scenario by examining the children who have the most favourable stock of familial and community resources available to them. They are likely to earn more than their counterparts from less advantaged backgrounds, but not as much as they could have earned.

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10. To paraphrase his research, these circumstances are three in number: (1) through social connections that facilitate access to education and jobs; (2) through family culture and investments that influence skills, beliefs and motivation; and (3) through the genetic transmission of ability. The amount of parental income advantage passed on to children consistent with equality of opportunity is not self-apparent as each of these successively broader fields correspond to a broader definition of equality of opportunity. Roemer makes explicit that equating equality of opportunity with complete generational mobility implies that not only should the influence of social connections and also of family culture and investment be eliminated, but so should the genetic transmission of ability and the influence of family on the formation of preferences and goals among children. He suggests this is "a view that only a fraction of those who consider the issue would, upon reflection, endorse" (Roemer 2004, p.49). As such, this is a cautionary note to readers of generational income mobility studies. In other words, the view that the appropriate target for policy should be to eliminate entirely the income advantage that is passed on between parents and children—to aim for β=0 as a goal—would require a degree of intervention into the lives of children and families that the majority in most societies might find untenable.

When applying this reasoning to testing the presence of credit constraints in the Becker-Tomes model Grawe (2004b, pp. 822-23) suggests that quantile regressions offer an appropriate methodological approach. If there is less than full equality of opportunity among certain immigrant groups it will be identified by a strong generational elasticity among children whose earnings are high conditional on their parent's earnings. These elasticities should be greater than those for children whose outcomes are low conditional on income. Grawe (2004b) hypotheses that upper quantiles, in other words, should be steeper and be the factor driving the generational elasticity calculated at the average through least squares.[11] We therefore adopt this approach with grouped data in order to begin a more detailed analysis of the least squares results in a way that isolate the role of so-called "social capital" effects on the outcomes of second generation children.

Tables 10 and 11 present the results for men and women respectively. The results for the 25th, 50th, and 75th quantiles are offered and, for the sake of reference, the least squares results from row 3 of Tables 7 and 8. Results from two models are presented, the first is equation (1) and the second adds an additional co-variate, the average number of years of education among fathers, to this equation. This latter formulation is meant to directly account for one measure of potential social capital.

For men, the quantile regression results suggest that the least squares estimate is, in fact, driven by the upper part of the distribution. The generational earnings elasticity is about 0.18 at the 25th and 50th quantiles, though the former is not statistically significant. This rises to 0.27 at the 75th quantile, essentially the same value as the least squares results. Though, as Table 7 suggests, the least squares results may be roughly the same as the population as a whole, the pattern in the quantile regression of an increasing elasticity is not. Grawe (2004b, Table 4.3) reports just the opposite tendency. In his sample the elasticity falls from 0.26 at the 25th quantile, to 0.21 at the median, and finally to 0.16 at the 75th quantile.

Our results suggest that sons from low-income immigrant backgrounds poised to be higher income adults still do not do as well as those from higher income immigrant backgrounds. Variations in social capital among the immigrant population may limit the degree of generational mobility, but it also has something to do with the influence of broader social institutions. This interaction is mediated by the average education levels of fathers. When this covariate is added to the model the least squares results do not change appreciably, with the generational earnings elasticity rising only slightly to 0.29. However, the quantile regression results change in important ways. The estimates in the second panel of Table 10 suggest, firstly, that the generational earnings elasticity is strongly positive at the lower end of the income distribution, flat in the middle, and then turns negative at the top.

The estimated elasticity of 0.605 for the 25th quantile suggests that net of the influence of parental education children from countries with on average low-income backgrounds who end up on average to have low-income as adults are much more disadvantaged than their counterparts from high-income backgrounds. Further, the elasticity of -0.136 among the most

11. In addition to Grawe (2004a, b) quantile regressions have also been used to study generational earnings mobility by Eide and Showalter (1999), but to the best of our knowledge they have not been used with specific reference to immigrants.

successful children of immigrants suggests there is an intergenerational reversal of earnings, with the children of parents with below average earnings becoming above average earners in the next generation. The change in the generational earnings elasticity across the two panels of this table suggests that lower levels of parental education of the low-income countries constrain the outcomes of their most successful sons. It is as if having a more educated parent is necessary to negotiate broader societal hurdles. The changes between the two panels is also suggesting that parental education is important in ironing out the disadvantages that relatively less successful sons from low-income backgrounds experience relative to their counterparts from high-income backgrounds.

Table 11 presents the findings for women. The slopes of the quantiles are all very flat, though positive at the bottom of the earnings distribution. Only the elasticity at the median is statistically significant from zero, but at -0.08 it is small in magnitude. However, once paternal years of education are controlled the results for women are, in fact, similar in kind to those for men: positive at the lower end of the income distribution, flat in the middle, and then negative at the top. The magnitudes are not as strong at the lower end as they are for sons, but stronger at the upper end. For daughters, the generational earnings elasticity of -0.723 suggests a strong intergenerational reversal of earnings across the generations at the higher quantile so that net of the influence of parental education, the daughters from low-income backgrounds are the high-income earners of the next generation. Thus, this is the major factor driving the differences between the genders. Father's education is correlated with income and plays a much stronger role in determining daughter outcomes at the top end of the earnings distribution.

Taken together these patterns explain the results for the average derived from least squares, distinguish the role of social capital from other community-level influences, and paint a more nuanced picture of the extent and nature of equality of opportunity among immigrants and their children. The process determining the transmission of family background into adult labour market success is very much mediated by aspects of family background other than income. In particular, the average years of parental education among the previous generation plays an important role in determining earnings and are an important dimension of social capital.

6. Conclusion

This paper examines the generational earnings mobility of Canadians born to immigrant parents. The labour market assimilation of immigrants has long been a concern of both research and policy, with the declining average earnings in a succession of recent cohorts sparking a number of studies. In this context, however, it is also important to understand the longer term implications and particularly the potential consequences for the adult labour market success of children. If the degree of generational mobility is high, if in other words a child's adult earnings are only weakly correlated with parental earnings, then it may be that relative disadvantages in childhood will not persist to the same extent in adulthood. Generational mobility is in this sense an important aspect in gauging the labour market integration of immigrants.

Our analysis uses new information from the 2001 Canadian Census and established estimation procedures based on grouped averages to examine the strength of the link between the weekly earnings of fathers and their sons and daughters. Second generation Canadians are a significant proportion of the adult population, with at the broadest level about 15% of Canadians having at least one parent born in another country. A descriptive overview of the population suggests that the education attainments and labour market outcomes of second generation Canadians are in the least no worse and in many ways better than those whose parents were born in Canada. Second generation Canadians are less likely to lack high school credentials and more likely to have a university degree; their incidence of reliance on government transfer payments and rates of employment and unemployment are no different; and their average earnings are greater.

We focus our analysis on a group of young adults whose parents were both born in a country outside of Canada and examine the strength of the tie between their earnings from the 2001 Census and the earnings of immigrants in the 1981 Census who are potentially their fathers. Using group averages by country of birth we develop a sample that allows an unbiased estimate of the earnings elasticity between fathers and children. On average, second generation children earn more than their parents did at a similar point in the life cycle. At the same time we find a statistically significant elasticity between father and son outcomes suggesting that the son's earnings will be about 2.7% higher for every 10% increase in father's earnings. This least squares estimate is less than half the value uncovered in comparable U.S. research. When measured in terms of annual earnings we find an intergenerational elasticity of 0.18, a result very similar to the findings for the general Canadian population in the existing literature. The degree of generational earnings mobility between fathers and sons is, on average, no different among the sons of immigrants to Canada than it is for the population as a whole. Further, by international standards this is a relatively high degree of mobility. If it remained unchanged it would imply there would, on average, be virtually no relationship between the earnings of immigrants and the earnings of their grandchildren. We also find that there does not appear to be any statistically significant relationship at all between father and daughter earnings.

Our analysis suggests that the transmission of earnings across generations works only slightly through the impact of paternal earnings on the education attainment of children. There is a strong tie between the paternal earnings and the number of years a son attends school, but the return to education is relatively low so that only about 5% of the 0.27 elasticity is due directly to educational attainment. Other channels between family background and adult earnings are much more important.

Our use of grouped averages abstracts from within country variation in outcomes and puts the focus on one often cited channel: the average characteristics of the community to which the child belongs, so-called "social capital." We find that a very important dimension of this is the average level of paternal education. More educated communities are able to steer their children through the barriers they may face in broader society in a way that gives them an advantage. By using quantile regressions, we find the generational elasticity calculated by least squares for the average is driven by the upper part of the son's earnings distribution. This result is consistent with the idea that broader societal institutions limit the earnings prospective of the most successful children from low earnings backgrounds. If average paternal education levels are controlled we find a generational reversal of earnings, with sons from below average

backgrounds becoming above average earners in their adulthood. These results are similar in kind for daughters.

In sum, relative earnings advantages and disadvantages in the first generation of immigration to Canada are only weakly passed on to the second generation, suggesting that in the past there has been a rapid integration of the children of immigrants into the mainstream of the Canadian labour market. To the extent that there is a relationship between the generations it comes mostly from the fact that the highest achieving sons of low-income immigrants do not earn as much as the highest achieving sons of high-income immigrants. But it should be stressed that by the very nature of the analysis these results refer to a group of young Canadians whose parents came to Canada before 1980, and who came of age in the context of the education system of the 1980s and the labour market of the 1990s. The extent to which these patterns continue to hold into the future and remain relevant for the children of more recent cohorts of immigrants is an important issue in understanding their prospects.

Table 1
Generational father-son earnings elasticities for cross-country comparisons

Country	Estimates for cross-country comparisons		
	Preferred	Lower bound	Upper bound
United Kingdom	0.50	0.43	0.55
United States	0.47	0.40	0.52
France	0.41	0.35	0.45
Germany	0.32	0.27	0.35
Sweden	0.27	0.23	0.30
Canada	0.19	0.16	0.21
Finland	0.18	0.16	0.21
Norway	0.17	0.15	0.19
Denmark	0.15	0.13	0.16

Note: The estimates are based upon studies of father and son earnings, fathers being 40 to 45 years of age, and their earnings averaged over a ten-year period.
Source: Corak (2004b), Table A-1.

Table 2
Characteristics of Canadian men by birthplace and parental birthplace

	Canadian born		Immigrants		Second generation Canadian born		
	Aboriginals	Third generation or more	Age of migration 11 yrs or younger	Age of migration 12 yrs or older	Only father is immigrant	Only mother is immigrant	Both parents immigrants
Population share (%)	2.65	61.51	3.90	16.46	4.48	3.27	7.74
Number (unweighted)	128,918	1,159,886	72,544	304,794	84,983	61,683	143,115
Mean age (years)	35.20	38.80	35.70	44.10	39.70	39.30	34.90
Age (%)							
16-24	26.00	18.95	25.79	7.27	21.54	20.66	26.05
25-34	24.75	19.13	22.77	16.21	18.31	18.67	26.81
35-44	24.13	25.66	21.53	26.33	19.29	19.96	25.84
45-54	15.84	22.28	22.10	26.22	19.78	25.05	11.02
55-65	9.27	13.98	7.81	23.97	21.08	15.65	10.28
Mean years schooling	11.17	13.01	13.98	13.93	13.60	13.70	14.11
Schooling (%)							
< 12 years	52.73	28.44	19.04	21.52	22.36	20.97	16.47
12 years	22.41	22.29	19.58	14.54	22.92	23.01	20.16
13-15 years	17.37	27.30	29.80	25.31	27.31	28.14	30.79
16 + years	7.50	21.97	31.58	38.63	27.41	27.88	32.58
Highest degree (%)							
< HS	48.19	28.27	22.16	22.65	24.06	23.19	19.66
HS	27.49	31.23	31.31	24.31	30.94	30.80	31.81
Certificate	20.92	26.50	25.90	25.52	26.72	26.72	27.71
BA	2.87	11.14	16.31	18.39	14.15	15.12	17.15
Graduate	0.53	2.87	4.31	9.13	4.14	4.17	3.68
Married (%)	49.61	59.24	50.05	73.90	56.20	56.90	47.64
Nativity of spouse of married individuals							
Aboriginal	54.08	1.43	1.11	0.29	2.05	1.73	1.21
Third generation	35.00	81.70	43.64	10.80	63.00	64.64	46.66
Immigrant	3.07	5.32	30.57	82.28	9.80	10.71	14.82
2nd generation	7.85	11.55	24.68	6.63	25.15	22.93	37.31
2nd generation w/ same father's POB	-	-	8.71	2.48	5.18	6.30	16.72
Incidence of transfers							
Rec'd gov't pension	0.12	0.13	0.10	0.12	0.15	0.14	0.16
Rec'd EI/WC	0.24	0.22	0.16	0.16	0.16	0.16	0.16
Rec'd Govt' asst.	0.87	0.68	0.66	0.72	0.67	0.65	0.67
Home language (%)							
Official lang.	78.84	99.52	67.48	34.29	98.08	98.17	78.74
Some official lang.	14.41	0.39	26.19	38.32	1.78	1.62	18.94
No official lang.	6.75	0.09	6.32	27.39	0.14	0.21	2.32

Table 2
Characteristics of Canadian men by birthplace and parental birthplace (*concluded*)

	Canadian born		Immigrants		Second generation Canadian born		
	Aboriginals	Third generation or more	Age of migration 11 yrs or younger	Age of migration 12 yrs or older	Only father is immigrant	Only mother is immigrant	Both parents immigrants
Mother tongue (%)							
English unilingual	65.36	58.18	38.08	22.28	79.15	81.44	59.32
English bilingual	3.94	5.72	4.88	1.92	9.80	10.64	7.60
French unilingual	2.15	16.58	0.92	1.29	1.67	1.37	0.53
French bilingual	5.98	18.85	2.72	2.14	5.97	4.11	2.12
Foreign and English	19.76	0.62	42.57	57.94	2.77	2.00	22.79
Foreign and French	1.28	0.00	0.73	2.15	0.01	0.01	0.15
Foreign and bilingual	0.92	0.04	9.89	8.28	0.62	0.43	7.42
Foreign and no official	0.61	0.01	0.20	4.00	0.01	0.01	0.07
% by cities							
Toronto	1.99	6.86	32.51	39.77	14.61	15.01	31.11
Montreal	1.23	12.61	10.03	12.31	7.22	5.42	10.05
Vancouver	3.80	3.92	11.21	14.33	9.00	8.87	10.22
Others	92.98	76.61	46.24	33.59	69.17	70.70	48.62
Occupation							
Management	6.68	11.65	14.36	13.51	13.17	13.39	13.72
Prof. – nature/health	5.20	10.12	14.46	15.97	11.28	11.77	13.36
Prof. – social/business	7.11	9.04	11.60	9.27	11.63	11.78	11.10
Administration	5.07	7.08	9.11	6.96	7.70	8.01	9.66
Sales	2.73	6.11	7.02	4.97	7.13	6.90	7.85
Services	17.75	12.46	13.03	12.39	12.88	12.78	12.87
Production	43.03	36.67	27.56	34.78	29.90	29.90	27.22
Farm/agriculture	12.42	6.88	2.86	2.19	6.31	5.47	4.23

Note: Individuals aged 16 to 65 living in a private household. Immigrants refers to people born outside Canada. Second generation immigrants are persons born in Canada with either parent born outside the country. Third generation or more refers to Canadian-born individuals with both parents born in Canada.

Source: Tabulations by authors from Statistics Canada, 2001 Census.

Table 3
Characteristics of Canadian women by birthplace and parental birthplace

	Canadian born		Immigrants		Second generation Canadian born		
	Aboriginals	Third generation or more	Age of migration 11 yrs or younger	Age of migration 12 yrs or older	Only father is immigrant	Only mother is immigrant	Both parents immigrants
Population share (%)	2.81	61.02	3.69	17.43	4.56	3.20	7.30
Number (unweighted)	132,076	1,187,527	70,789	331,788	89,656	62,344	140,682
Mean age (years)	35.38	39.17	36.02	43.69	40.23	39.57	35.12
Age (%)							
16-24	24.86	17.94	24.42	6.84	19.94	19.85	25.41
25-34	25.31	19.13	22.68	18.23	18.37	18.86	26.89
35-44	24.73	26.08	22.52	26.54	19.45	20.04	25.88
45-54	15.92	22.54	22.64	25.83	20.39	25.10	11.06
55-65	9.18	14.30	7.75	22.57	21.85	16.15	10.75
Mean years schooling	11.57	13.18	13.84	13.19	13.63	13.70	14.26
Schooling (%)							
< 12 years	46.32	24.29	18.09	24.36	19.85	18.66	13.43
12 years	22.31	23.11	21.84	16.27	24.14	24.73	20.53
13-15 years	22.00	30.65	31.12	28.73	30.32	30.43	32.72
16 + years	9.36	21.95	28.95	30.64	25.68	26.18	33.32
Highest degree (%)							
< HS	42.77	24.48	20.53	26.14	21.69	20.80	16.12
HS	28.04	31.40	32.48	26.46	30.82	30.82	31.23
Certificate	23.86	29.24	26.65	25.43	28.96	29.22	29.07
BA	4.75	12.61	16.98	16.79	15.42	15.89	20.39
Graduate	0.58	2.26	3.37	5.19	3.10	3.26	3.19
Married (%)	50.75	61.40	53.46	70.60	57.15	57.58	51.30
Nativity of spouse of married individuals							
Aboriginal	50.04	1.22	0.81	0.20	1.60	1.57	0.85
Third generation	36.44	80.14	37.84	9.72	57.91	62.36	41.46
Immigrant	4.11	5.98	41.33	84.43	11.6	10.97	20.02
2nd generation	9.40	12.66	20.02	5.65	28.89	25.11	37.67
2nd generation w/ same father's POB	-	-	5.71	1.53	6.46	6.69	16.74
Incidence of transfers							
Rec'd gov't pension	0.12	0.15	0.12	0.18	0.19	0.16	0.16
Rec'd EI/WC	0.21	0.20	0.15	0.15	0.15	0.15	0.15
Rec'd Govt' Asst.	0.88	0.69	0.68	0.75	0.69	0.67	0.66
Home language (%)							
Official lang.	79.80	99.51	65.99	33.65	97.76	98.16	77.64
Some official lang.	14.15	0.41	28.43	37.60	2.09	1.67	20.42
No official lang.	6.05	0.08	5.58	28.75	0.15	0.17	1.94

Table 3
Characteristics of Canadian women by birthplace and parental birthplace *(concluded)*

	Canadian born		Immigrants		Second generation Canadian born		
	Aboriginals	Third generation or more	Age of migration 11 yrs or younger	Age of migration 12 yrs or older	Only father is immigrant	Only mother is immigrant	Both parents immigrants
Mother tongue (%)							
English unilingual	65.74	56.49	36.84	24.07	77.16	79.35	54.82
English bilingual	4.53	6.97	5.87	1.91	11.45	12.62	9.40
French unilingual	2.35	19.22	1.05	1.33	2.06	1.79	0.56
French bilingual	5.10	16.65	2.71	1.76	5.47	3.68	2.13
Foreign and English	19.32	0.62	41.04	55.07	3.00	2.00	23.57
Foreign and French	1.35	0.00	0.83	2.84	0.01	0.01	0.17
Foreign and bilingual	0.81	0.05	11.35	6.42	0.85	0.54	9.29
Foreign and no official	0.80	0.01	0.31	6.61	0.01	0.01	0.07
% by cities							
Toronto	2.28	6.92	33.33	40.35	14.76	14.95	31.65
Montreal	1.28	13.18	10.07	11.54	7.34	5.30	9.91
Vancouver	4.04	3.77	10.91	14.92	8.76	8.91	10.14
Others	92.40	76.13	45.69	33.19	69.15	70.85	48.30
Occupation							
Management	5.52	7.41	9.18	7.87	8.28	8.23	8.53
Prof. – nature/health	7.01	11.59	10.92	13.01	10.79	11.14	11.14
Prof. – social/business	15.15	14.89	16.67	11.91	17.18	17.46	17.81
Administration	25.74	28.95	31.45	24.10	29.29	28.94	32.43
Sales	4.94	7.62	8.81	6.43	8.42	8.45	9.05
Services	32.49	20.95	16.60	20.54	19.36	19.15	15.73
Production	6.76	6.48	5.01	14.65	4.33	4.47	3.67
Farm/agriculture	2.38	2.11	1.36	1.50	2.35	2.16	1.64

Note: Individuals aged 16 to 65 living in a private household. Immigrants refers to people born outside Canada. Second generation immigrants are persons born in Canada with either parent born outside the country. Third generation or more refers to Canadian-born individuals with both parents born in Canada.

Source: Tabulations by authors from Statistics Canada, 2001 Census.

Table 4
Labour market outcomes of Canadian men by birthplace and parental birthplace in 2000

	Canadian born		Immigrants		Second generation Canadian born		
	Aboriginals	Third generation or more	Age of migration 11 yrs or younger	Age of migration 12 yrs or older	Only father is immigrant	Only mother is immigrant	Both parents immigrants
Labour force status (reference week)							
Employed	55.94	77.51	76.97	76.07	76.75	78.15	77.94
Unemployed	15.51	6.36	5.38	5.58	5.53	5.39	5.14
Not in LF	28.56	16.12	17.65	18.35	17.71	16.46	16.92
Worked last year (%)	72.90	86.20	84.70	82.50	85.50	86.70	85.90
Mean weeks worked	27.00	37.90	37.40	37.10	37.30	38.20	37.80
% full-time	60.50	74.90	71.30	74.40	70.90	73.10	70.90
Individuals w/ positive earnings							
Mean annual earnings	25,351	39,098	43,059	40,211	41,331	42,823	41,490
Mean weekly earnings	676.50	848.50	903.70	868.10	885.90	905.10	872.40
CV of weekly earnings	0.91	0.84	0.86	0.86	0.88	0.87	0.88
Earnings quartiles							
Quartile 1	36.69	24.57	24.86	24.02	26.66	25.28	26.32
Quartile 2	27.68	25.35	22.08	26.96	22.25	21.95	22.99
Quartile 3	19.97	25.51	24.66	23.93	23.61	24.54	24.59
Quartile 4	15.66	24.56	28.40	25.09	27.48	28.24	26.10
Adjusted earnings distribution[*]							
Quartile 1	31.53	24.57	23.71	29.62	30.06	27.46	25.20
Quartile 2	29.52	25.35	23.28	28.04	23.55	23.00	23.84
Quartile 3	22.23	25.51	24.32	21.30	22.13	23.63	23.92
Quartile 4	16.72	24.56	28.69	21.04	24.26	25.91	27.04

Note: Individuals aged 16 to 65 living in a private household. Immigrants refers to people born outside Canada. Second generation immigrants are persons born in Canada with either parent born outside the country. Third generation or more refers to Canadian-born individuals with both parents born in Canada.

Source: Tabulations by authors from Statistics Canada, 2001 Census.

Table 5
Labour market outcomes of Canadian women by birthplace and parental birthplace in 2000

	Canadian born		Immigrants		Second generation Canadian born		
	Aboriginals	Third generation or more	Age of migration 11 yrs or younger	Age of migration 12 yrs or older	Only father is immigrant	Only mother is immigrant	Both parents immigrants
Labour Force Status (reference week)							
Employed	50.27	68.52	70.54	60.05	68.55	69.7	71.8
Unemployed	10.19	4.96	4.85	5.54	4.40	4.59	4.43
Not in LF	39.54	26.51	24.60	34.41	27.04	25.71	23.77
Worked last year (%)	62.50	76.40	78.20	66.90	77.20	78.30	80.30
Mean weeks worked	23.30	32.50	33.30	28.70	32.60	33.00	34.00
% full-time	44.10	53.20	54.20	50.90	51.00	52.20	53.60
Individuals w/ positive earnings							
Mean annual earnings	18,389	24,819	27,802	25,610	25,741	26,392	27,127
Mean weekly earnings	491.70	576.40	642.50	603.00	600.10	610.60	629.20
CV of weekly earnings	0.99	0.90	0.90	0.93	0.91	0.92	0.90
Earnings Quartiles							
Quartile 1	32.40	25.62	23.61	21.66	26.24	25.92	24.06
Quartile 2	28.57	25.24	20.67	27.92	22.70	22.19	21.39
Quartile 3	22.14	24.76	25.39	26.25	24.36	24.30	25.49
Quartile 4	16.89	24.39	30.33	24.17	26.71	27.59	29.06
Adjusted Earnings Distribution[*]							
Quartile 1	28.23	25.62	22.78	25.54	28.07	27.27	22.49
Quartile 2	29.42	25.24	22.06	29.43	23.77	23.29	22.75
Quartile 3	24.01	24.76	25.47	23.67	23.49	23.90	25.72
Quartile 4	18.35	24.39	29.68	21.37	24.67	25.55	29.04

Note: Individuals aged 16 to 65 living in a private household. Immigrants refers to people born outside Canada. Second generation immigrants are persons born in Canada with either parent born outside the country. Third generation or more refers to Canadian-born individuals with both parents born in Canada.

Source: Tabulations by authors from Statistics Canada, 2001 Census.

Table 6
Education and earnings of potential fathers and children by source region

	Percent from source region	Years of education	Weekly earnings relative to Canadian born, third generation	Percent with a university degree
1. Potential fathers in 1980 (sample size = 80,651)				
North America, Northern and Western Europe	30.9	13.9	1.14	18.2
Caribbean, Central and South America and Oceania	8.6	13.0	0.84	14.0
Southern and Eastern Europe	41.1	8.8	0.90	4.4
Africa	2.9	14.9	1.05	31.7
Asia	16.4	13.6	0.90	32.0
Canadian born, third generation or more		11.3	$ 1,049	10.8
2. Second generation men 25 to 37 in 2001 (sample size = 45,415)				
North America, Northern and Western Europe	31.7	14.8	1.14	26.0
Caribbean, Central and South America and Oceania	6.1	14.8	0.86	22.5
Southern and Eastern Europe	49.1	14.8	1.06	25.7
Africa	1.6	16.3	1.06	49.4
Asia	11.5	16.3	1.06	49.0
Canadian born men, third generation or more 25 to 37 in 2001		14.0	$ 839	18.8
3. Second generation women 25 to 37 in 2001 (sample size = 41,927)				
North America, Northern and Western Europe	31.4	15.2	1.15	33.4
Caribbean, Central and South America and Oceania	6.5	15.6	1.04	33.7
Southern and Eastern Europe	48.8	15.4	1.17	34.8
Africa	1.8	16.8	1.26	61.3
Asia	11.5	16.6	1.27	58.4
Canadian born women, third generation or more 25 to 37 in 2001		14.6	$ 614	25.7

Notes: All results reported for those with positive weekly wages.
Panel 1 consists of immigrants who are married to or have a common-law partner who is also an immigrant, and to the Canadian born with *both* spouses or common-law partners being third plus generation Canadian-born individuals. Both groups are further restricted to those who had children between ages 5 to 17 in 1980.

Source: Tabulations by authors from Statistics Canada, 2001 Census.

Table 7
Least squares estimates of regression to the mean models of earnings for immigrant fathers and their sons

Outcome	Sample selection rules		Least squares regression results		
	Fathers	Sons	Constant	Slope coefficient	R^2
1. *ln* weekly earnings for sons	- male, immigrant - 16 to 65 years - 1981 Census	- male - 16 to 65 years both parents immigrants - 2001 Census	5.50 [0.573]	0.207 [0.084]	0.17
2. *ln* weekly earnings for sons at age 31	- male, immigrant - 16 to 65 years - 1981 Census	- male - 16 to 65 years - both parents immigrants - 2001 Census	5.13 [0.573]	0.207 [0.084]	0.17
3. *ln* weekly earnings for sons at age 31	- male, immigrant - married or in a common law relationship with another immigrant - children 5 to 17 years - 1981 Census	- male - 25 to 37 years - both parents immigrants - 2001 Census	4.82 [0.680]	0.267 [0.100]	0.25
4. *ln* weekly earnings for sons at age 31	- male, immigrant or spouse is an immigrant - married or in a common - law relationship - children 5 to 17 years - 1981 Census	- male - 25 to 37 years - at least one parent immigrant - 2001 Census	5.11 [0.607]	0.224 [0.089]	0.22
5. *ln* annual earnings for sons at age 31	- male, immigrant - married or in a common law relationship with another immigrant - children 5 to 17 years - 1981 Census	- male - 25 to 37 years - both parents immigrants - 2001 Census	8.60 [0.928]	0.176 [0.087]	0.11

Notes: Earnings are adjusted for age and region as described in the text. The number of observations in all cases is 70, corresponding to the country of birth of the father. Estimations are based on weighted least squares, with the sum of the number of sons and daughters from each group as the weight. Standard errors are presented in square brackets. All estimates are significant at least at the 5% level.

The sample selection rules in row 1 are similar to those in Card, DiNardo, and Estes (2000) and intended to facilitate a Canada-U.S. comparison. The use of annual earnings as the outcome in row 5 is intended to facilitate comparisons to existing studies of generational mobility among the general Canadian population.

Table 8
Least squares estimates of regression to the mean models of earnings for immigrant fathers and their daughters

	Outcome	Sample selection rules		Least squares regression results		
		Fathers	Daughters	Constant	Slope coefficient	R^2
1.	*ln* weekly earnings for daughters	- male, immigrant - 16 to 65 years - 1981 Census	- female - 16 to 65 years - both parents immigrants - 2001 Census	6.86 [0.623]	-0.050 [0.092]	0.01
2.	*ln* weekly earnings for daughters at age 31	- male, immigrant - 16 to 65 years - 1981 Census	- female - 16 to 65 years - both parents immigrants - 2001 Census	6.57 [0.623]	-0.050 [0.092]	0.01
3.	*ln* weekly earnings for daughters at age 31	- male, immigrant - married or in a common law relationship with another immigrant - children 5 to 17 years - 1981 Census	- female - 25 to 37 years both parents immigrants - 2001 Census	6.715 [0.738]	-0.048 [0.108]	0.01
4.	*ln* weekly earnings for daughters at age 31	- male, immigrant or spouse is an immigrant - married or in a common law relationship - children 5 to 17 years - 1981 Census	- female - 25 to 37 years - at least one parent immigrant - 2001 Census	7.13 [0.649]	-0.114 [0.095]	0.03
5.	*ln* annual earnings for daughters at age 31	- male, immigrant - married or in a common law relationship with another immigrant - children 5 to 17 years - 1981 Census	- female - 25 to 37 years - both parents immigrants - 2001 Census	11.1 [0.966]	-0.093 [0.091]	0.02

Notes: Earnings are adjusted for age and region as described in the text. The number of observations in all cases is 70, corresponding to the country of birth of the father. Estimations are based on weighted least squares, with the sum of the number of sons and daughters from each group as the weight. Standard errors are presented in square brackets. All estimates are significant at least at the 5% level.

The sample selection rules in row 1 are similar to those in Card, DiNardo, and Estes (2000) and intended to facilitate a Canada-U.S. comparison. The use of annual earnings as the outcome in row 5 is intended to facilitate comparisons to existing studies of generational mobility among the general Canadian population.

Table 9
Decomposition of the generational earnings elasticity

	Generational earnings elasticity	Individual return to education	Impact of parental income on education	Influence of education	Influence through channels other than education
	β	ρ	γ	$\rho\gamma$	$cov(Y_{i,t-1}, u_{i,t}) / var(Y_{i,t-1})$
Sons	0.267 [0.100]	0.031 [0.008]	0.465 [0.980]	0.0144	0.253 [0.054]
Daughters	-0.048 [0.108]	0.105 [0.018]	0.284 [0.815]	0.0298	-0.0778 [0.050]

Note: Standard errors are presented in [ ].
Source: Calculations by authors using Statistics Canada, 2001 Census.

Table 10
Quantile regression estimates of father-son generational earnings elasticities

		Least Squares	Quantile regression		
			25th quantile	50th quantile	75th quantile
1.	*ln* weekly earnings	0.267	0.183	0.177	0.271
		[0.100]	[0.244]	[0.004]	[0.056]
	Constant	4.82	5.39	5.43	4.81
		[0.680]	[1.67]	[0.030]	[0.380]
	R^2	0.25	0.18	0.25	0.10
2.	*ln* weekly earnings	0.292	0.605	0.116	-0.136
		[0.139]	[0.000]	[0.020]	[0.000]
	Years of father's education	-0.002	-0.018	0.003	0.013
		[0.004]	[0.000]	[0.001]	[0.000]
	Constant	4.68	2.71	5.82	7.42
		[0.907]	[0.000]	[0.128]	[0.000]
	R^2	0.25	0.34	0.26	0.22

Notes: Standard errors are presented in square brackets. All quantile regression estimates are significant at the 1% level except the slope estimate for the 25th quantile in model 1, which is not statistically different from zero. For the quantile regression results R^2 refers to the pseudo R^2.

Sample selection rules are the same as row 3 of Table 4 with a total of 70 observations. The least squares results are repeated for reference from row 4, Table 4.

Table 11
Quantile regression estimates of father-daughter generational earnings elasticities

		Least squares	Quantile regression		
			25th quantile	50th quantile	75th quantile
1.	*ln* weekly earnings	-0.048 [0.108]	0.150 [0.134]	-0.079 [0.023]	-0.049 [0.125]
	Constant	6.72 [0.738]	5.33 [0.921]	6.93 [0.158]	6.73 [0.843]
	R^2	0.01	0.03	0.06	0.03
2.	*ln* weekly earnings	-0.104 [0.171]	0.374 [0.147]	-0.053 [0.000]	-0.723 [0.067]
	Years of father's education	0.004 [0.007]	-0.019 [0.011]	-0.001 [0.000]	0.027 [0.002]
	Constant	7.04 [1.09]	4.052 [0.939]	6.76 [0.000]	11.00 [0.431]
	R^2	0.02	0.10	0.08	0.11

Notes: Standard errors are presented in square brackets. All quantile regression estimates are significant at the 1% level except the slope estimate for the 25th quantile in models 1 and 2, and that for the 75th quantile in model 1. The former is not statistically different from zero, the latter is at the 105 level. For the quantile regression results R^2 refers to the pseudo R^2.

Sample selection rules are the same as row 3 of Table 5 with a total of 70 observations. The least squares results are repeated for reference from row 4, Table 5.

Appendix Table 1
List of countries and summary statistics used in the analysis

		Immigrant Fathers					Second Generation Age 25-35									
							Women					Men				
Index	Father's Place of Birth	1980 Number of Obs	1980 weighted pop	Mean Ages	1980 Mean Log Wage	1980 Years of School	2000 Number of Obs	2000 weighted pop	Mean Ages	2000 Mean Log Wage	2000 Years of School	2000 Number of Obs	2000 weighted pop	Mean Ages	2000 Mean Log Wage	2000 Years of School
1	UNITED STATES	2,117	9,923	41.38	6.89	17.02	769	1,658	30.23	6.26	15.44	730	1,688	30.35	6.50	15.29
2	BARBADOS	180	1,981	40.47	6.70	13.41	293	1,114	29.74	6.59	15.75	209	1,155	29.78	6.66	15.17
3	GRENADA	50	254	41.26	6.84	12.95	61	212	29.18	6.30	16.08	36	221	28.55	6.22	15.39
4	HAITI	494	2,968	38.22	6.43	14.11	208	1,129	27.36	6.30	16.15	209	1,166	27.32	6.39	15.50
5	JAMAICA	1,728	8,946	39.43	6.55	12.24	738	3,989	28.75	6.27	15.12	695	3,893	28.91	6.40	14.82
6	OTHER C AMERICA	310	1,516	37.43	6.50	10.22	179	914	29.55	6.09	12.48	221	1,215	30.26	6.00	12.24
7	OTHER CARIBBEANS	127	658	40.27	6.87	14.54	66	331	29.63	6.35	16.76	90	501	29.46	6.80	15.45
8	S LUCIA/VINCENT	79	401	40.28	6.59	14.21	77	418	29.90	6.37	15.44	79	433	29.13	6.51	15.09
9	TRINIDAD	897	4,572	39.81	6.74	13.92	450	2,245	28.53	6.34	16.09	418	2,340	28.39	6.44	15.57
10	ARGENTINA	152	742	38.44	6.72	14.20	42	224	27.83	6.21	15.30	48	254	28.03	6.60	15.64
11	BRAZIL/CHILE	493	2,480	37.28	6.67	14.73	99	271	28.44	6.24	15.08	57	332	27.68	6.61	14.84
12	COLOMBIA	113	569	37.59	6.48	12.89	34	220	27.02	6.60	15.53	31	181	28.29	6.47	14.78
13	ECUADOR	162	819	37.07	6.40	10.81	41	218	26.92	6.26	15.10	38	228	26.97	6.65	13.63
14	GUYANA	888	4,589	39.14	6.64	14.06	300	1,646	28.72	6.25	15.78	311	1,667	28.82	6.53	15.11
15	OTHER S AMERICA	236	1,180	39.92	6.69	13.61	56	313	28.17	6.01	15.55	64	347	28.20	6.63	15.18
16	PARAGUAY	72	362	38.95	6.80	8.51	58	314	29.17	6.41	14.31	50	222	28.57	6.74	13.43
17	AUSTRIA	467	2,418	45.61	6.91	13.79	313	1,670	32.19	6.44	15.94	327	1,729	32.15	6.64	15.57
18	DENMARK / ICELAND	599	2,899	43.78	6.87	13.05	241	1,308	32.18	6.36	15.14	291	1,527	32.40	6.61	14.86
19	FINLAND	321	1,585	43.32	6.90	11.42	197	910	31.47	6.22	15.23	164	876	31.64	6.36	15.28
20	FRANCE	822	4,120	42.12	6.91	14.61	398	2,090	31.16	6.39	16.14	351	1,918	31.11	6.75	16.01
21	GERMANY	3,498	17,272	45.04	6.85	13.56	2,421	12,606	32.31	6.39	15.30	2,760	14,697	32.42	6.67	15.20
22	IRELAND	358	1,806	43.98	6.91	13.06	480	2,442	31.81	6.45	15.13	483	2,615	31.93	6.63	15.00
23	NETHERLANDS	4,111	20,623	45.67	6.74	12.57	3,230	16,684	32.25	6.25	15.01	3,668	19,188	32.20	6.64	14.74
24	NORWAY	86	394	45.22	6.99	14.17	42	216	31.86	6.14	14.55	64	331	32.27	6.78	14.64
25	OTHER W EUROPE	309	1,590	44.63	6.82	13.49	204	991	32.21	6.24	15.56	193	997	31.78	6.69	14.90
26	SWEDEN	100	492	41.05	7.11	14.65	38	242	30.39	6.44	15.42	43	216	31.44	6.59	14.89
27	SWITZERLAND	275	1,370	43.16	6.74	14.55	146	758	31.68	6.36	15.82	150	774	31.85	6.67	15.73
28	UNITED KINGDOM	12,239	61,986	42.45	6.97	14.75	5,105	26,595	31.31	6.38	15.55	5,464	29,242	31.36	6.67	15.16
29	GREECE	1,612	19,265	42.42	6.86	4.88	2,525	13,154	30.39	6.41	15.69	2,705	14,667	30.75	6.86	15.25
30	ITALY	15,344	76,923	43.49	6.69	8.03	10,969	57,979	31.23	6.40	15.35	11,917	64,089	31.36	6.62	14.66
31	MALTA	142	1,729	40.68	6.77	10.41	222	1,180	31.07	6.47	15.11	229	1,255	31.04	6.89	13.80
32	PORTUGAL	5,122	25,951	41.26	6.63	6.93	2,137	11,474	29.61	6.32	14.47	2,356	12,602	29.63	6.61	13.78
33	SPAIN/OTHER S EUROPE	425	2,135	43.09	6.93	12.91	177	920	30.39	6.52	16.23	210	1,180	30.08	6.66	16.00
34	FORMER YUGOSLAVIA	2,997	15,005	42.44	6.76	11.47	1,714	9,081	30.61	6.44	15.82	1,862	10,074	30.57	6.66	15.41
35	FORMER CZECH / BULGARIA	379	1,941	43.06	6.87	15.49	320	1,714	30.44	6.40	16.15	363	1,892	30.45	6.64	15.93
36	HUNGARY	1,065	5,333	46.53	6.85	13.59	756	4,094	31.85	6.39	15.62	820	4,394	32.05	6.60	15.43
37	POLAND	1,763	8,766	44.61	6.91	12.70	989	5,087	32.13	6.38	16.04	930	4,983	32.42	6.63	15.79
38	ROMANIA	368	1,857	46.14	6.79	13.49	196	822	32.79	6.41	16.12	167	926	32.49	6.80	15.90
39	RUSSIAN	1,194	5,973	49.28	6.76	14.53	751	3,646	32.73	6.36	16.46	826	4,425	32.97	6.64	15.76
40	EGYPT	547	2,733	44.05	6.97	16.69	251	1,396	29.18	6.58	17.09	243	1,232	29.57	6.89	17.05
41	KENYA	220	1,121	40.56	6.72	14.85	65	224	26.92	6.53	17.39	68	242	27.36	6.71	17.49
42	MOROCCO	310	1,523	42.54	6.81	13.58	114	680	29.58	6.59	16.05	120	675	30.09	6.85	15.86
43	OTHER E/C AFRICA	145	738	39.90	6.94	15.89	58	195	28.90	6.36	14.93	67	253	28.57	6.35	15.56
44	OTHER N AFRICA	119	596	42.63	6.82	13.62	46	261	30.84	6.41	17.11	51	298	31.22	6.77	15.66
45	S AFRICA	463	2,362	41.77	6.95	16.01	103	512	30.15	6.45	17.04	108	590	30.93	6.72	16.36
46	TANZANIA	291	1,507	40.57	6.61	13.58	42	221	27.03	6.44	16.92	47	260	26.31	6.94	16.61
47	UGANDA	219	1,091	40.25	6.60	13.05	44	165	26.19	6.79	16.91	42	203	27.07	6.74	16.82
48	W AFRICA	92	479	37.90	6.59	16.06	77	417	28.27	6.39	15.96	59	329	28.83	6.51	16.41
49	CYPRUS	157	802	39.46	6.71	11.03	68	256	30.77	6.55	16.51	55	284	28.74	6.45	16.06
50	IRAN/IRAQ	163	831	43.75	6.76	15.04	44	228	29.61	6.71	18.94	48	247	29.33	6.81	16.77
51	ISRAEL	237	1,110	41.61	6.71	13.61	53	322	29.18	6.46	15.62	75	454	28.52	6.72	15.99
52	LEBANON	516	2,604	41.12	6.51	10.48	259	1,395	29.99	6.50	14.97	325	1,813	30.11	6.58	15.05
53	OTHER W ASIA	55	286	39.31	6.51	14.15	73	375	28.80	6.39	15.61	86	459	28.38	6.65	15.08
54	SYRIA	123	600	42.41	6.63	12.10	52	313	28.48	6.50	16.38	67	237	28.53	6.83	16.19
55	TURKEY	194	991	43.30	6.70	13.66	63	369	29.31	6.37	16.52	73	418	30.80	6.80	15.70
56	CHINA	1,654	8,265	44.04	6.52	11.82	1,679	9,105	30.48	6.63	17.06	1,846	10,043	30.78	6.69	16.94
57	HONG KONG	839	4,267	39.34	6.77	15.41	255	1,327	28.35	6.69	17.39	237	1,341	28.26	6.63	17.56
58	INDIA	1,649	18,788	40.13	6.92	15.80	1,235	6,630	28.31	6.53	16.72	1,318	7,134	28.34	6.68	16.82
59	INDONESIA	178	866	43.66	6.83	16.75	66	372	29.41	6.50	16.77	94	515	30.67	6.70	16.09
60	JAPAN	192	967	40.27	6.83	16.10	76	404	27.52	6.45	16.72	90	516	28.25	6.57	16.53
61	KOREA	596	3,096	41.97	6.67	15.80	189	1,036	27.83	6.55	17.61	163	988	28.03	6.62	17.47
62	MALAYSIA SINGAPORE	277	1,365	41.16	6.84	16.31	62	324	27.99	6.71	17.69	82	431	28.42	6.66	17.13
63	OTHER E ASIA	671	4,380	37.06	6.28	13.99	53	293	29.80	6.37	14.25	76	424	28.51	6.60	16.23
64	PAKISTAN NEPAL BANG	385	1,937	41.27	6.75	15.56	106	537	28.11	6.42	16.53	137	748	28.26	6.63	17.07
65	PHILIPPINES	1,615	8,084	39.12	6.67	16.02	471	2,437	27.76	6.39	16.48	413	2,202	27.65	6.61	16.03
66	SRI LANKA	120	599	41.42	6.84	16.14	56	285	28.14	6.62	15.97	67	262	30.07	6.82	16.62
67	TAIWAN	1,639	8,279	44.10	6.56	12.41	33	182	28.03	6.72	17.88	42	250	27.74	6.90	17.56
68	AUSTRALIA	160	797	42.94	7.16	17.14	57	327	30.16	6.45	16.15	60	355	30.65	6.66	15.70
69	FIJI OCEANIAS	446	2,293	38.91	6.58	12.55	95	462	27.64	6.35	15.17	64	371	28.78	6.46	15.63
70	NEW ZEALAND	119	571	40.45	7.12	16.79	43	205	31.23	6.19	17.06	53	279	29.48	6.83	16.50

Source: Calculations by authors from Statistics Canada, 2001 Census

Appendix Table 2
Educational attainment of men, by age groups

	Canadian born		Immigrants		Second generation Canadian born		
	Aboriginals	Third generation or more	Age of migration <= 11	Age of migration >= 12	Only father is immigrant	Only mother is immigrant	Both parents immigrants
Age 16-24							
< 12 yrs	59.12	31.93	28.98	24.18	27.03	28.00	22.37
12 yrs	26.63	28.22	23.38	23.01	28.49	28.95	23.25
13-15 yrs	12.04	30.01	33.98	36.35	32.46	31.33	36.50
16 + yrs	2.21	9.85	13.65	16.45	12.02	11.72	17.88
Age 25-34							
< 12 yrs	43.21	16.64	9.31	13.86	10.64	8.78	7.85
12 yrs	25.69	21.90	16.89	14.31	20.18	21.65	17.10
13-15 yrs	21.50	31.33	29.25	26.66	30.70	31.13	30.84
16 + yrs	9.60	30.13	44.55	45.17	38.49	38.44	44.20
Age 35-44							
< 12 yrs	48.46	23.11	14.71	17.19	15.77	15.71	11.85
12 yrs	21.67	23.15	19.97	14.18	22.84	22.76	20.54
13-15 yrs	20.10	29.13	29.58	25.65	28.48	29.82	30.78
16 + yrs	9.78	24.62	35.75	42.98	32.90	31.71	36.83
Age 45-54							
< 12 yrs	53.06	28.74	18.35	20.32	19.50	19.77	15.25
12 yrs	18.12	21.11	18.40	13.73	22.76	22.08	20.18
13-15 yrs	19.07	25.84	28.37	24.87	25.80	26.73	28.07
16 + yrs	9.76	24.31	34.88	41.08	31.94	31.41	36.49
Age 55-65							
< 12 yrs	70.73	49.18	28.42	31.95	36.49	34.89	36.89
12 yrs	11.13	15.07	17.19	13.41	19.81	18.59	19.36
13-15 yrs	11.24	17.06	22.23	21.16	19.47	20.48	19.11
16 + yrs	6.90	18.69	32.16	33.48	24.23	26.05	24.63
Age 25-65							
Mean year schooling	11.23	13.14	14.40	14.01	13.83	13.96	14.43
< 12 yrs	50.48	27.63	15.58	21.31	21.08	19.14	14.39
12 yrs	20.93	20.90	18.26	13.88	21.39	21.46	19.08
13-15 yrs	19.24	26.66	28.34	24.45	25.90	27.31	28.78
16 + yrs	9.35	24.81	37.81	40.37	31.64	32.08	37.76
Highest degree							
< HS	42.26	25.41	15.91	21.87	20.48	18.93	15.52
HS	27.61	29.21	26.79	22.48	27.16	27.47	26.34
Certificate	25.79	28.95	31.33	26.56	30.46	30.70	32.62
BA	3.63	12.92	20.24	19.29	16.67	17.68	20.64
Graduate	0.71	3.51	5.72	9.80	5.22	5.22	4.87

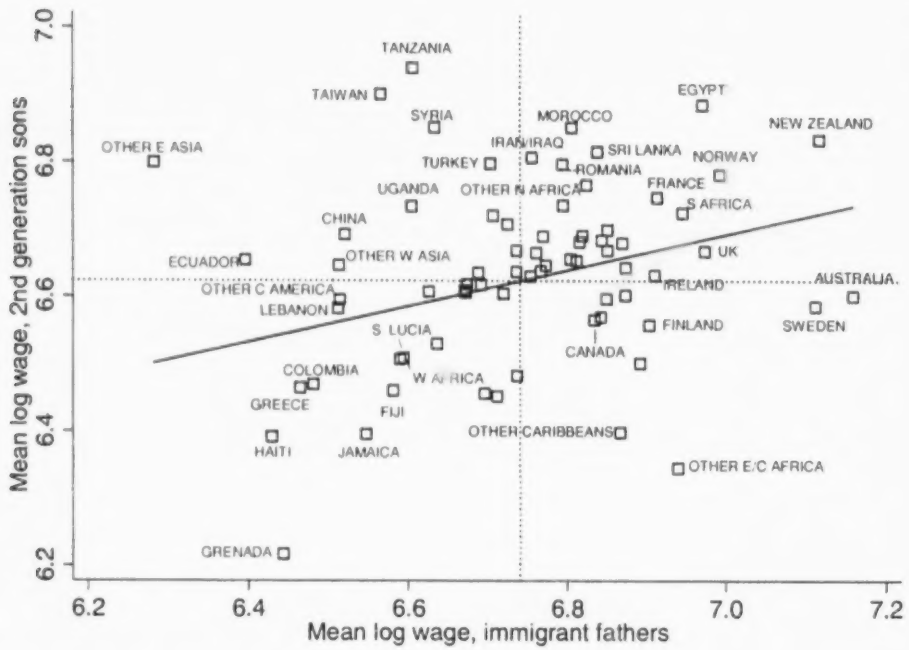
Source: Tabulations by authors from Statistics Canada, 2001 Census.

Appendix Table 3
Educational attainment of women, by age groups

	Canadian born		Immigrants		Second generation Canadian born		
	Aboriginals	Third generation or more	Age of migration <= 11	Age of migration >= 12	Only father is immigrant	Only mother is immigrant	Both parents immigrants
Age 16-24							
< 12 yrs	53.35	25.75	25.79	20.92	23.34	23.68	18.15
12 yrs	26.67	24.65	21.05	22.06	24.29	25.64	19.18
13-15 yrs	16.64	35.06	36.96	37.47	35.79	35.43	39.13
16 + yrs	3.34	14.54	16.20	19.55	16.58	15.25	23.54
Age 25-34							
< 12 yrs	36.55	11.82	7.14	14.38	7.31	7.34	4.77
12 yrs	23.44	19.33	14.87	14.82	17.99	17.72	14.03
13-15 yrs	27.27	33.66	30.47	29.71	31.69	31.37	31.13
16 + yrs	12.74	35.18	47.52	41.09	43.01	43.57	50.07
Age 35-44							
< 12 yrs	40.16	17.58	12.72	18.24	11.59	11.58	8.27
12 yrs	22.48	26.09	24.09	15.92	25.67	26.10	24.06
13-15 yrs	25.61	32.72	32.01	30.02	32.64	32.79	33.52
16 + yrs	11.75	23.61	31.17	35.82	30.11	29.54	34.15
Age 45-54							
< 12 yrs	47.02	26.19	20.23	25.15	17.39	17.93	12.96
12 yrs	19.32	24.87	26.76	16.47	27.84	28.27	25.75
13-15 yrs	21.83	28.47	27.58	28.66	28.86	28.70	30.12
16 + yrs	11.82	20.47	25.43	29.72	25.91	25.09	31.18
Age 55-65							
< 12 yrs	69.64	48.40	35.19	39.78	36.87	35.62	36.83
12 yrs	12.12	18.04	23.79	15.84	24.36	24.63	26.12
13-15 yrs	12.59	20.73	22.41	23.86	23.49	22.92	22.31
16 + yrs	5.66	12.83	18.61	20.52	15.27	16.82	14.73
Age 25-65							
Mean year schooling	11.66	13.24	14.10	13.19	13.76	13.86	14.47
< 12 yrs	44.00	23.97	15.60	24.62	18.99	17.42	11.82
12 yrs	20.87	22.78	22.09	15.84	24.10	24.51	20.99
13-15 yrs	23.78	29.68	29.24	28.09	28.96	29.19	30.54
16 + yrs	11.35	23.57	33.07	31.45	27.95	28.89	36.65
Highest degree							
< HS	37.57	22.50	15.54	26.02	19.07	17.66	12.68
HS	27.06	29.56	28.85	25.02	27.67	27.76	26.56
Certificate	28.78	31.27	31.15	26.17	32.32	32.68	33.23
BA	5.81	13.95	20.07	17.28	17.14	17.87	23.41
Graduate	0.77	2.71	4.39	5.52	3.81	4.03	4.12

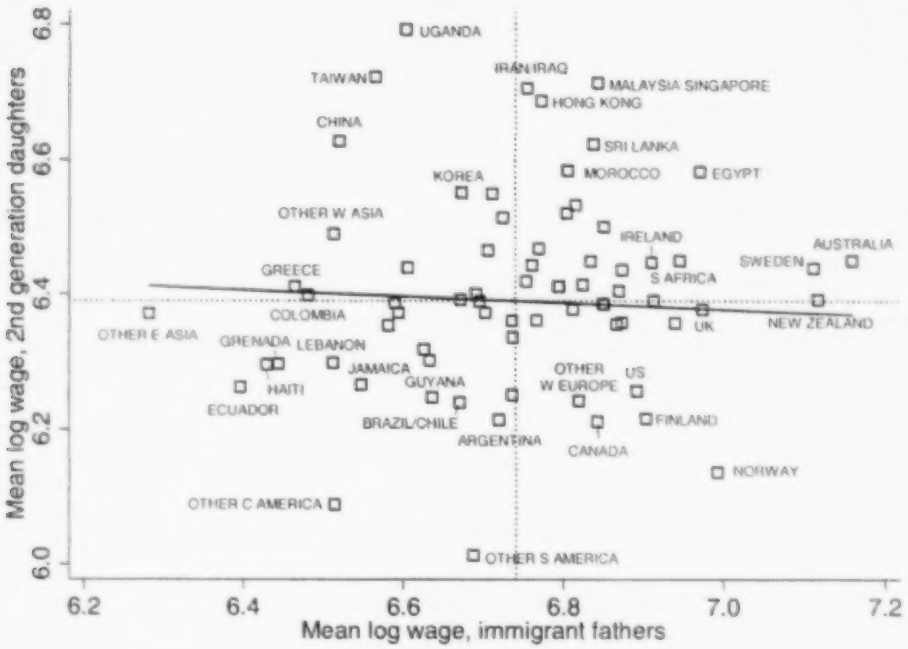
Source: Tabulations by authors from Statistics Canada, 2001 Census.

Figure 1
Scatter plot of grouped data of weekly earnings for fathers and sons



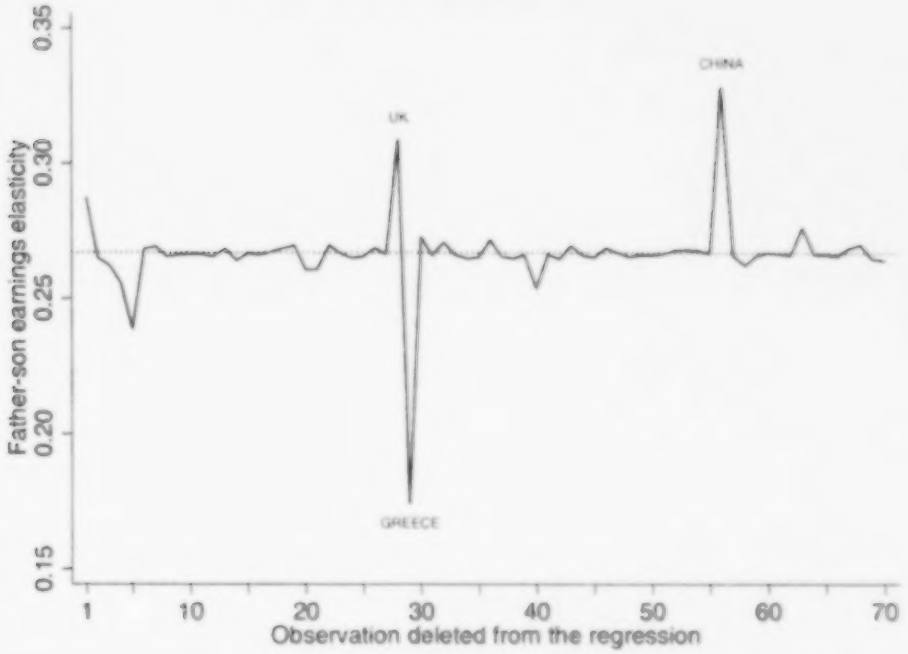
Note: Sample selection rules are those described in row 3 of Table 7.
The weighted least squares regression line is depicted and has a slope of 0.267. Dotted lines represent the average log weekly earnings of fathers and sons. Not all points are labeled. See Appendix Table 1 for details. An observation for Canadian-born children of Canadian-born fathers is included for reference but not used in the regression.

Figure 2
Scatter plot of grouped data of weekly earnings for fathers and daughters



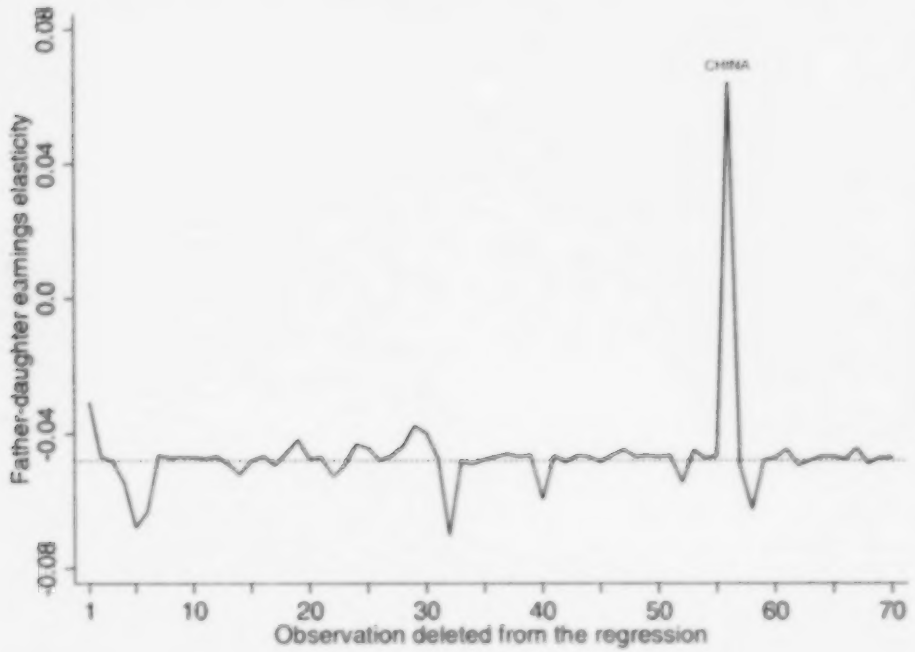
Note: Sample selection rules are those described in row 3 of Table 8.
The weighted least squares regression line is depicted and has a slope of -0.048. Dotted lines represent the average log weekly earnings of fathers and daughters. Not all points are labeled. See Appendix Table 1 for details. An observation for Canadian-born children of Canadian-born fathers is included for reference but not used in the regression.

Figure 3
Influential data points in least squares estimates of father-son earnings elasticity



Note: The graph depicts the estimated weighted least squares elasticity for a series of samples of 69 observations, each of which successively excludes a single observation. The horizontal axis shows the observation that is excluded. See Appendix Table 1 for a complete list of the index numbers. Sample selection rules are those described in row 3 of Table 7. The slope of weighted least squares regression line using all 70 observations is depicted as the horizontal dashed line at 0.267.

Figure 4
Influential data points in least squares estimates of father-daughter earnings elasticity



Note: The graph depicts the estimated weighted least squares elasticity for a series of samples of 69 observations, each of which successively excludes a single observation. The horizontal axis shows the observation that is excluded. See Appendix Table 1 for a complete list of the index numbers. Sample selection rules are those described in row 3 of Table 8. The slope of weighted least squares regression line using all 70 observations is depicted as the horizontal dashed line at -0.048.

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